

Remarks:

Reconsideration of the application is requested.

Claims 1, 5-9, 10-11, and 22-25 are now in the application. Claims 1, 5, 7-8, and 10 have been amended. A marked-up version of the claims is attached hereto on separate pages. Claims 2-4, 6, and 12-21 have been cancelled. New claims 22-25 have been added. Support for claim 22-24 can be found on page 10, lines 2-8 of the specification of the instant application. Support for claim 25 can be found in claim 1 and Figs. 1 and 2 of the instant application. Further support for "said cutting knife being wound at least one turn around said first cutting cylinder" can be found in the definition of a helix from Webster's Third New International Dictionary (of the English Language Unabridged) Vol. 2, which is attached hereto as an appendix.

In item 1 on page 2 of the above-identified Office action, the drawings have been objected to.

More specifically, the Examiner has stated that it is unclear, from Fig.3, how the subframe is pivotably connected to the housing. The Examiner further stated that it is unclear which side of the subframe has the pivot. It is respectfully noted that the pivotable connection is only diagrammatically shown

as being representative of the many ways of mounting the subframe 9 to the frame 10 which are known and that any pivotable manner is acceptable. With regard to the Examiner's comments that it is unclear which side of the frame has the pivot, it is respectfully noted that it is clear when looking at the angle α in Fig 1. A change in the angle α occurs by pivoting on the side where the angle is located. Furthermore, the specification states that the angle α of the cylinders 2, 3 in relationship to the ribbon 1 may be decreased (the cylinders 2, 3 are oriented more parallel to the ribbon 1) (page 8, lines 13-15) and the angle α of the cylinders 2, 3 in relationship to the ribbon 1 may be increased (the cylinders 2, 3 are oriented less parallel to the ribbon 1) (page 8, lines 18-21). Therefore, the drawings have not been amended.

In item 2 on page 2 of the Office action, the Examiner has stated that the title is not descriptive. The Examiner further stated that a new title is required that is clearly indicative of the invention to which the claims are directed. The title has been amended so as to facilitate prosecution.

In item 3 on page 2 of the Office action, the disclosure has been objected to because of the following informalities: On page 8, line 5, the phrase "cut-to-length" should be replaced by "cut-to-cut length". The specification has been amended to

correct the typographical error and to facilitate prosecution of the application. A marked-up version of the paragraph is attached hereto on a separate page.

In item 4 on page 2 of the Office action, claims 10-19 have been objected to because of the following informalities: In regards to the term "folder", the Examiner stated that it is unclear what is being referred to. The term "folder" as defined in Webster's Third New International Dictionary (of the English Language Unabridged) Vol. 1, is: an instrument or machine for folding paper, leather, or other flexible material. This definition makes it clear clear what the term folder refers to. Furthermore, the term folder is readily understood to have that definition those of ordinary skill in the art. Therefore, the claims have not been amended to overcome the objection by the Examiner.

In item 6 on page 3 of the Office action, claim 1 has been rejected as being fully anticipated by Martin (U.S. Patent No. 4,493,235) under 35 U.S.C. § 102.

In item 8 on page 3 of the Office action, claims 2-4 and 7-8 have been rejected as being obvious over Martin (U.S. Patent No. 4,493,235) in view of Murphy (U.S. Patent No. 5,000,812) under 35 U.S.C. § 103.

In item 9 on page 4 of the Office action, claims 5-6 and 9-21 have been rejected as being obvious over Martin (U.S. Patent No. 4,493,235) and Murphy (U.S. Patent No. 5,000,812) in view of Neff et al. (U.S. Patent No. 3,552,251) under 35 U.S.C. § 103.

The rejections have been noted and the claims have been amended in an effort to even more clearly define the invention of the instant application. The claims should be allowable for the reasons given below. Support for the changes is found in claims 3, 5, and 6 of the instant application.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claims 1 and 10 call for, inter alia:

"a sensor connected to said control unit, said sensor providing control signals to said control unit for controlling operation of said cylinders."

Regarding item 6 on page 3 of the Office action, rejecting claim 1 over Martin (U.S. Patent No. 4,493,235) under 35 U.S.C. § 102, it is noted that due to the amendment to claim 1, in which the subject matter of claims 3, 5, and 6 has been added thereto, the rejection is now moot.

Regarding the rejections in items 8 and 9 of the Office action, it is noted that none of the references cited show or suggest a sensor connected to the control unit, the sensor providing control signals to the control unit for controlling operation of the cylinders, as recited in claims 1 and 10 of the instant application. None of the references teach controlling the length of the cut by controlling the rotational speed of the cylinder and/or by adjusting the angle of the cylinder to the ribbon.

Furthermore, it is noted that none of the prior art documents cited shows or suggests a helical cutting cylinder, drives, control units and sensors including the operation mode as set forth in claims 1 and 10 of the instant application. Therefore, claims 1 and 10 should be patentable over the art.

Furthermore, a critical step in analyzing the patentability of claims pursuant to 35 U.S.C. § 103 is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. See In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one "to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher." Id. (quoting W.L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 313 (Fed. Cir. 1983)).

Most if not all inventions arise from a combination of old elements. See In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998). Thus, every element of a claimed

invention may often be found in the prior art. See id. However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. See id. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the appellant. See In re Dance, 160 F.3d 1339, 1343, 48 USPQ2d 163.5, 1637 (Fed. Cir. 1998); In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

The motivation, suggestion or teaching may come explicitly from statements in the prior art, the knowledge of one of ordinary skill in the art, or, in some cases the nature of the problem to be solved. See Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617. In addition, the teaching, motivation or suggestion may be implicit from the prior art as a whole, rather than expressly stated in the references. See WMS Gaming, Inc. v. International Game Tech., 184 F.3d 1339, 1355, 51 USPQ2d 1385, 1397 (Fed. Cir. 1999). The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art. See In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981) (and cases cited therein). Whether the examiner relies on an express or an implicit showing, the examiner must provide particular findings related thereto. See Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617. Broad conclusory statements standing alone are not "evidence." Id. When an examiner relies on general knowledge to negate patentability, that knowledge must be articulated and placed on the record. See In re Lee, 277 F.3d 1338, 1342-45, 61 USPQ2d 1430, 1433-35 (Fed. Cir. 2002).

Upon evaluation of the examiner's response, it is respectfully believed that the evidence adduced by the examiner is insufficient to establish a prima facie case of obviousness with respect to the claims. Accordingly, the examiner is requested to withdraw the rejection.

Claim 23 calls for, inter alia:

"a first cutting cylinder having a periphery with a cutting knife disposed helically about said periphery, said cutting knife completing at least one turn around said first cutting cylinder".

Regarding new claim 23, it is noted that none of the references shows or suggests a first cutting cylinder having a periphery with a cutting knife disposed helically about the periphery, the cutting knife completing at least one turn around the first cutting cylinder as recited in claim 1 of the instant application. All of the references cited by the Examiner show helical cutting surfaces, which do not even come close to completing a completed turn around the cutting cylinder. This is contrary to claim 23, wherein the cutting knife completes at least one turn around the first cutting cylinder, thereby allowing the cutting cylinder to be positioned at an oblique angle to the ribbon.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claims 1, 10, and 23. Claims 1, 10, and 23 are, therefore, believed to be patentable over the art and since all of the dependent claims are ultimately dependent on claim 1, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 1, 5-9, 10-11, and 22-25 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel respectfully requests a telephone call so that, if possible, patentable language can be worked out.

Petition for extension is herewith made. The extension fee for response within a period of one month pursuant to Section 1.136(a) in the amount of \$110 in accordance with Section 1.17 is enclosed herewith.

Please charge any other fees which might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner & Greenberg P.A., No. 12-1099.

Respectfully submitted,



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HEM 99/607 (HA-2911)

Marked-up version of the claims:

Claim 1 (amended). A cutting unit, comprising:

a pair of cylinders disposed opposite one another with a gap formed there-between for receiving a ribbon, said pair of cylinders including a first cutting cylinder having a periphery with a cutting knife disposed helically about said periphery and a second cylinder; [and]

[a] one drive rotating said first cutting cylinder for cutting the ribbon [such that] and providing a signature cut from the ribbon [has] with a smooth, straight edge;

a subframe having a pivot point, said subframe being pivotable about said pivot point, said subframe supporting said cylinders, and said subframe having a position controlling a position of said cylinders in regard to the ribbon and therefore controlling a cutting length of the ribbon;

a further drive connected to said subframe for pivoting said subframe about said pivot point;

a control unit connected to and controlling said further drive and said one drive for controlling a rotational speed of said first cutting cylinder; and

a sensor connected to said control unit, said sensor providing control signals to said control unit for controlling operation of said cylinders.

Claim 5 (amended). The cutting unit according to claim [4] 1, [including:] wherein said one drive is a first drive,

[a subframe having a pivot point about which said subframe is pivotable,] said first drive[, and said second drive[, and said cylinders] are supported by said subframe[; and

a further drive connected to said subframe for pivoting said subframe about said pivot point, a position of said subframe controlling a position of said cylinders in regard to the ribbon and therefore controlling a cutting length of the ribbon].

Claim 7 (amended). The cutting unit according to claim [2] 1, wherein said one drive is a first drive, a second drive rotates and mounts said second cylinder, and said first drive and said second drive are motors.

Claim 8 (amended). The cutting unit according to claim [2] 1,
wherein said one drive is a first drive, a second drive
rotates and mounts said second cylinder, and said first drive
and said second drive are gears to be driven by motors.

Claim 10 (amended). A folder, comprising:

a frame;

a subframe [pivotally] pivotably mounted in said frame about a
pivot point;

[a] one drive housed in said subframe; [and]

a pair of cylinders supported by said subframe and disposed
opposite one another with a gap formed there-between for
receiving a ribbon, said pair of cylinders including a first
cutting cylinder having a periphery with a cutting knife
disposed helically about said periphery and a second cylinder,
said first cutting cylinder driven by said one drive for
cleanly cutting the ribbon [such that] and providing a
signature cut from the ribbon [has] with a smooth, straight
edge;

said subframe having a position controlling a position of said cylinders in regard to the ribbon and therefore controlling a cutting length of the ribbon;

a further drive connected to said subframe for pivoting said subframe about said pivot point;

a control unit connected to and controlling said further drive and said one drive for controlling a rotational speed of said first cutting cylinder; and

a sensor connected to said control unit, said sensor providing control signals to said control unit for controlling operation of said cylinders.

HEM 99/607 (HA-2911)

Marked-up version of the specification:

In the Title:

[Cutting Unit Incorporating a Helical Mechanism for Varying a
Cutting Length and Method for Operating the Cutting Unit]

Helical Cutting Unit and Method for Operating the Same

In the paragraph on page 8, lines 5-11:

-- When a different [cut-to-length] cut-to-cut length of the ribbon 1 is required by the printing system, the angular orientation α of the cylinders 2, 3 relative to the ribbon 1 is changed. In addition, the proportionality constant of rotation of the cylinders 2, 3 is adjusted so that the component of travel of the point of contact in the direction of travel 7 of the ribbon 1 still matches the speed of the ribbon 1.--

helicat

F *héliométrique*, fr. *hélio-*
aploying, or obtained by
s) (<~ results) — **he-lio-**

: : the art or practice of

'heli- + micrometer]: an
aphic positions of spots
graphs of the sun or on

√L, fr. *heli* + *-phila*] : a
r partly woody perennial
cultivated for their long
s with white eyes

+ -phile] : one attracted
to the beach); *specif* : an
num exposure to sunlight
he-li-o-phil-ic \hēlē-
hilic] : attracted by or

• + *-phobe*] : one that is
sunlight

he·lio·pho·bic \ˈhēlē-
-əs or -phobɪk\ : avoiding

Sw *heliophyllit*, fr. 'heli-
roximately $\text{Pb}_6\text{As}_2\text{O}_7\text{Cl}_4$
arsenic that is apparently

[li- + -phyte] : a plant

adj, usu cap [LL *Helio-* tan (fr. Gk *Hēliopolitēs*, ty in Lower Egypt) + ncient Heliopolis, esp.

politanus, fr. *Heliopolites*
it of the ancient city of

pl., *cap* [NL, fr. *Helio-* + *-idae*]: a family of a) comprising the blue having the corallum comd with more numerous yps without tentacles or

fr. *helli-* + *-opsis*] : a Compositae) resembling and a conical receptacle
[fr. *helli-* + *-ornis*] : the type single tropical American

pl. cap [NL, fr. *Hellor-*
: a family of tropical
nprising the sun-grebes
of a rail, a long body

. Gk *hēlios* sun — more

; \-ō,sēz\ [NL, fr. LL,
hēlioursthai to be exposed
 in) + -sis]: SUNSTROKE
heliostata, fr. 'heli- +
 strument consisting of a
 clockwork by which a
 : direction — compare
 ope — he-li-o-stat-ic

shield, and in diluting oxygen for breathing (as by patients with respiratory ailments and by divers) — symbol *He*; see ALPHA PARTICLE; ELEMENT table

helium group n : the group of elements forming group zero of the periodic table : the group of inert gases

helium I \,='wæn\ *n*: normal liquid helium boiling at 4.2°K under a pressure of 1 atmosphere and capable of existing between the critical point of 5.2°K and 2.26 atmosphere and the lambda point of 2.19°K

helium II \,==\ 'tū\ *n*: superfluid helium formed from helium I by cooling below the lambda point and characterized by a very low viscosity and very high thermal conductivity

helix \ˈhēlɪks, ˈhel-\\ *n, pl heli·ces* \ˈhelə,sēz, ˈhēl-\\ *also helix·es* \ˈhēlɪksəz, ˈhel-\\ [L, fr. Gk — more at **HELENIUM**]

1 : something spiral in form; as **a** : an ornamental volute (as in an Ionic or Corinthian capital) **b** : a coil formed by winding wire around a uniform tube **2** : the incurved rim of the external ear **3** : a curve traced on a cylinder by the rotation of a point crossing its right sections at a constant oblique angle : a space curve with turns of constant slope from the base and constant distance from the axis : the curve described by the thread of a bolt or by a tubular coil spring; *broadly* : a three-dimensional curve with one or more turns around an axis (as the space curve described by a conical coil spring)

2helix \ " n, cap [NL, fr. L, something spiral in form, volute]
: a genus (the type of the family Helicidae) of orig. chiefly
Eurasian and African pulmonate land snails having a coiled
shell with a low conical spire and a wide reflexed lip and
including the chief edible snails (as *H. pomatia*) as well as a
number of pests of cultivated plants (as the brown snail)

helix angle *n*: the constant angle between the tangent to a helix and a generator of the cylinder upon which the helix lies
helix-in \ 'hēlīksən, 'hel- \ *n* -s [NL *helix* (specific epithet of *Hedera helix*) (fr. L *helix* ivy, volute) + E -in]: HEDERIN

helix-om-e-ter \,=ˈsäl-məd-ə(r)\ *n* [*helix* + *-o-* + *-meter*] : a tubular instrument in which an electric light and a prism and lens system enable visual examination of a small-arms bore (as in criminal investigation)

hell \ˈhel\ *n* -s often attrib [ME, fr. OE; akin to OE *helan* to conceal, OHG *hella* hell, HME to conceal, ON *hel* heathen realm of the dead, Goth *halja* hell, L *celare* to hide, conceal, Gk *kalyptein* to cover, conceal, Skt *śarana* screening, protecting; basic meaning: concealing] **1 a** : a place or state of the dead or of the damned: as (1) : a place usu. under the ground in which the dead continue to exist : NETHERWORLD, HADES, SHEOL <I will slay the last of them with the sword . . . though they dig into ~ —Amos 9:1-2 (AV)> <spake of the resurrection of Christ that his soul was not left in ~ —Acts 2:31 (AV)> — compare LIMBO (2) : a netherworld in which the damned must suffer everlasting punishment (as by fire) and malevolent beings live under the rule of the devil — called also *Gehenna*; compare PURGATORY (3) : a spiritual state of lasting separation from God or of complete isolation : eternal death **b** (1) : a nether domain of the devil and the demons (2) : the fallen angels headed by Satan : the devil and the demons of hell : the powers of evil **c** *Christian Science* : ERROR **2b**, SIN **2 a** : a place or state of misery, torment, or wickedness (hundreds of gallons of spilled gasoline turn the . . . wreckage into a concentrated ~ of searing flames —H.G. Armstrong) <condemned to go through the ~ of war —F.L. Allen> — used interjectionally to express irritation, irony, incredulity, or surprise <oh ~> <expert, ~! — he's no more an expert than I am>; often used as a generalized term of abuse <go to ~> or as a mild oath <to ~ with it> or as an intensive (<~ yes>); often used with *in* <what in ~ are you doing> or *the* <get the ~ out of here> or *to* <lives way to ~ out in the sticks> <hope to ~ you're right> or *as* <cold as ~> <serious as all ~> <he sure as ~ did it> or in the phrases *hell of a* (<in ~ of a crash> <a good singer and one